

No. 711,590.

Patented Oct. 21, 1902.

C. B. POST.
NUMBERING MACHINE.

(Application filed Mar. 5, 1901.)

(No Model.)

2 Sheets—Sheet 1.

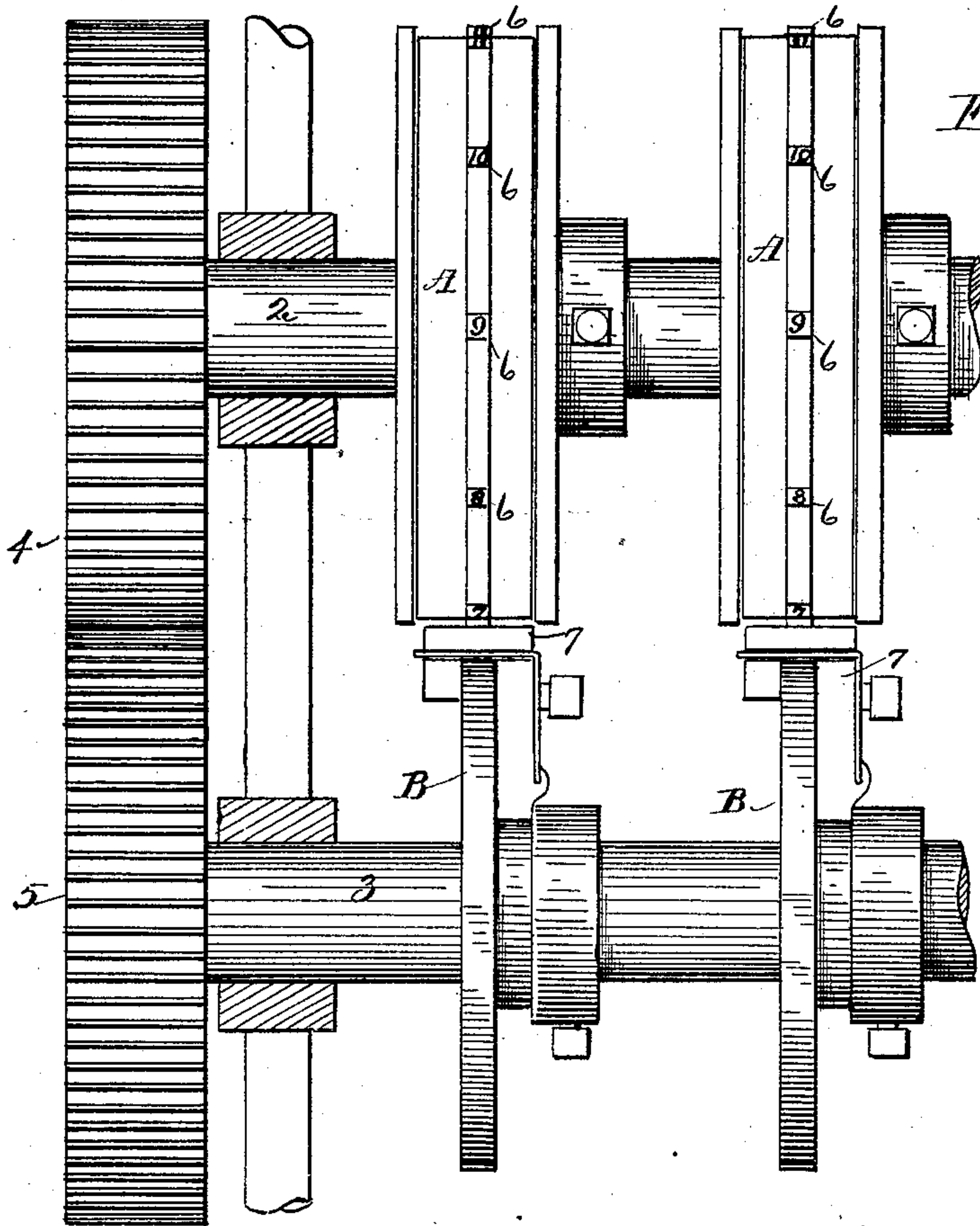


Fig. 1

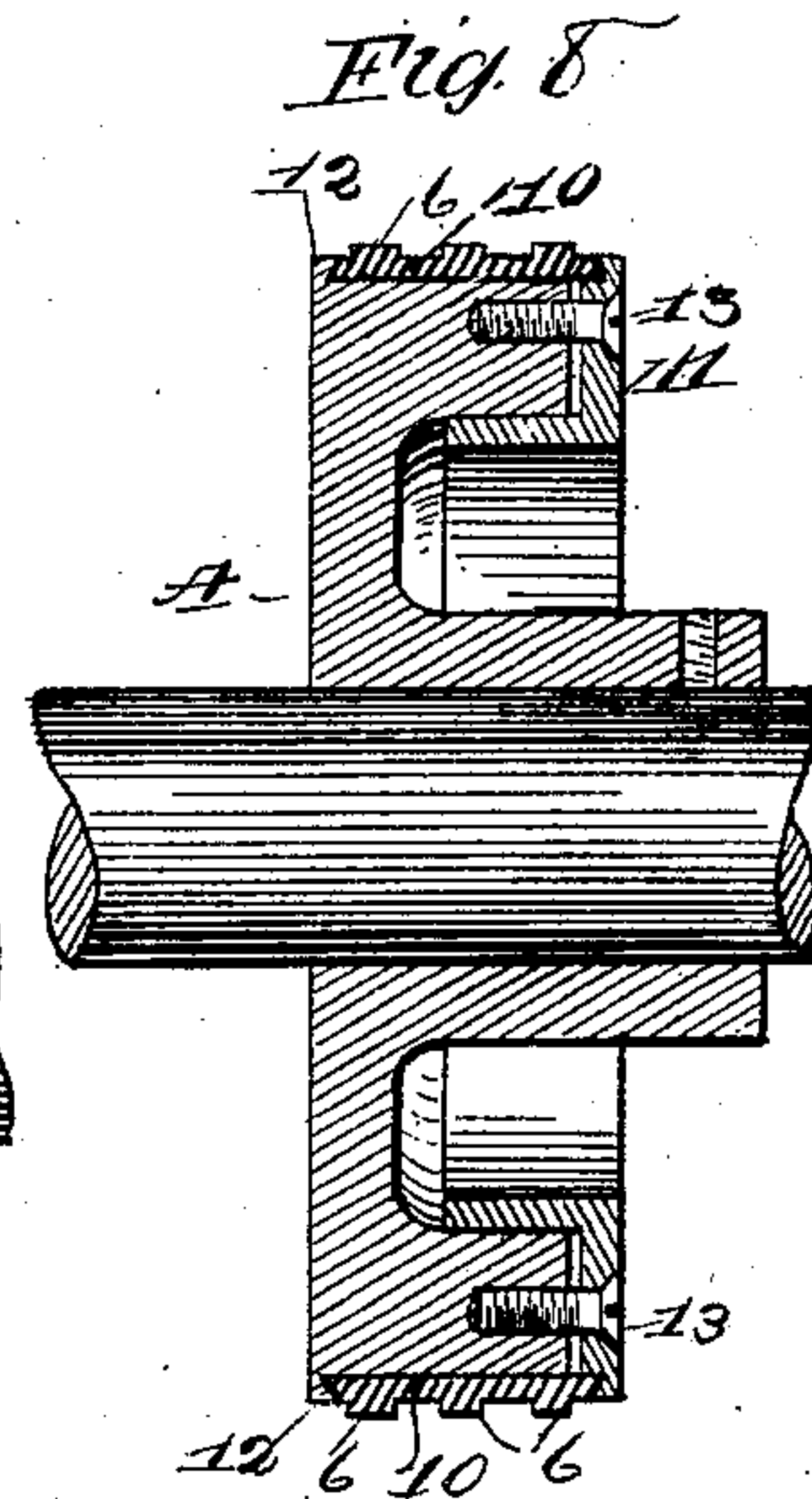


Fig. 8

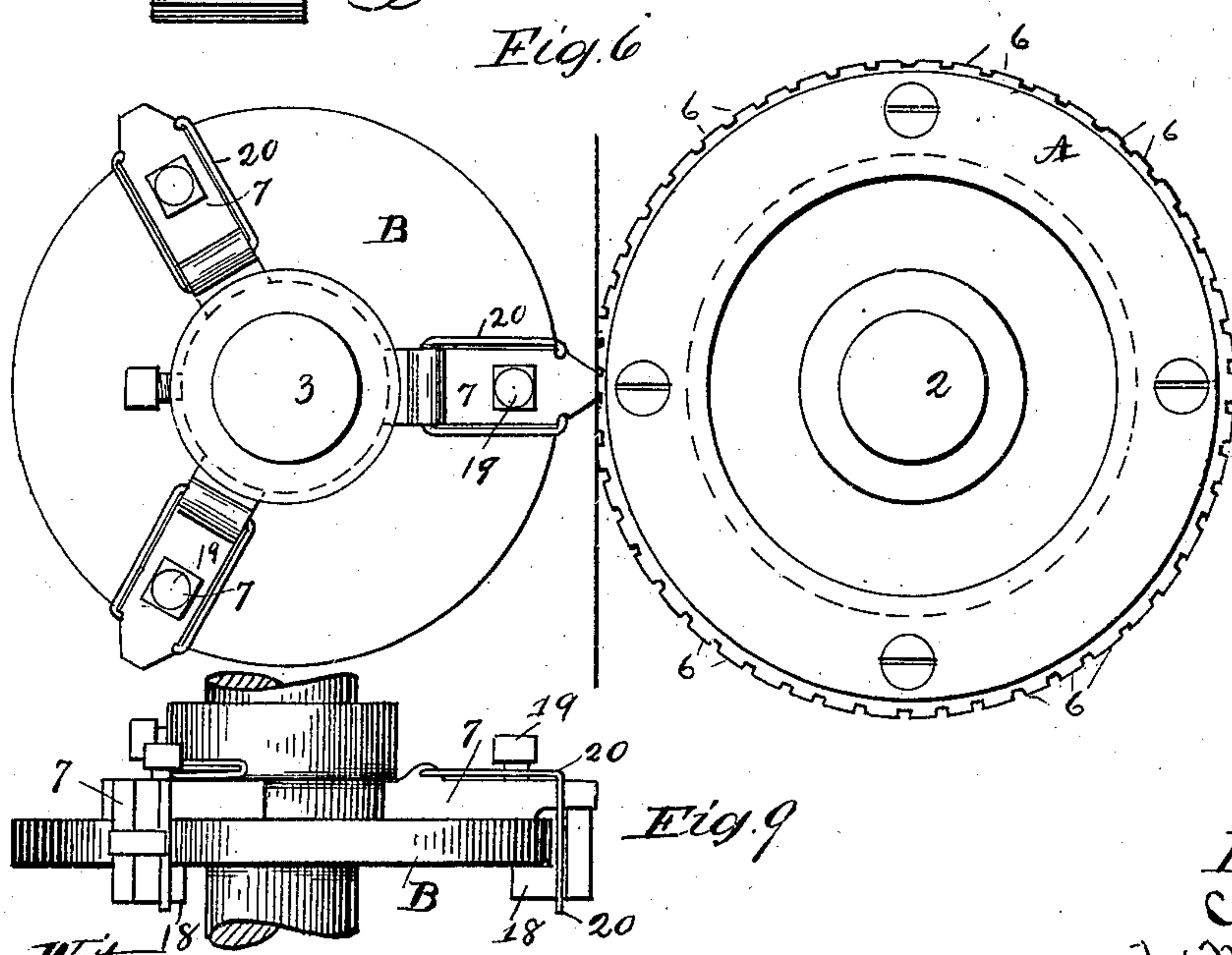


Fig. 6

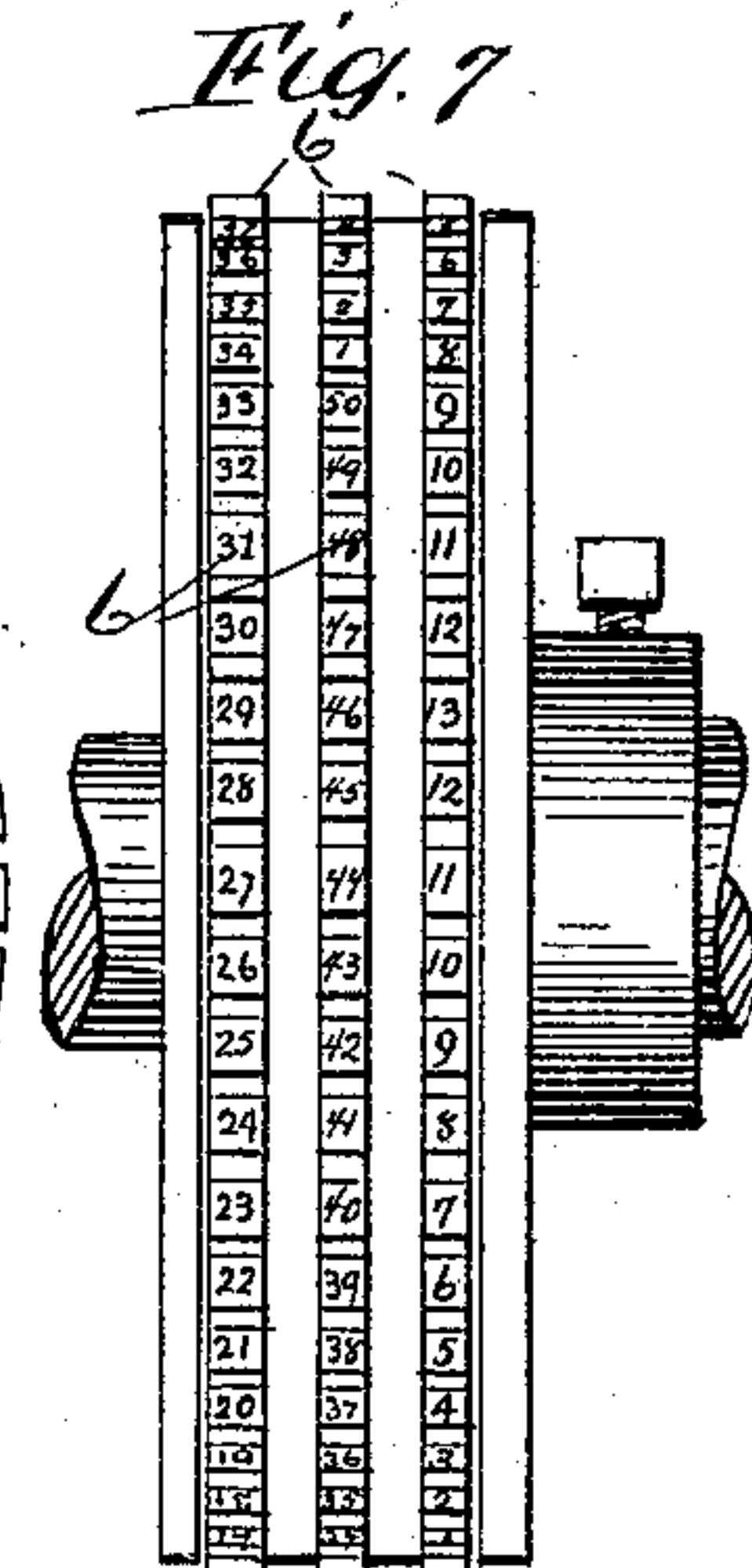


Fig. 7

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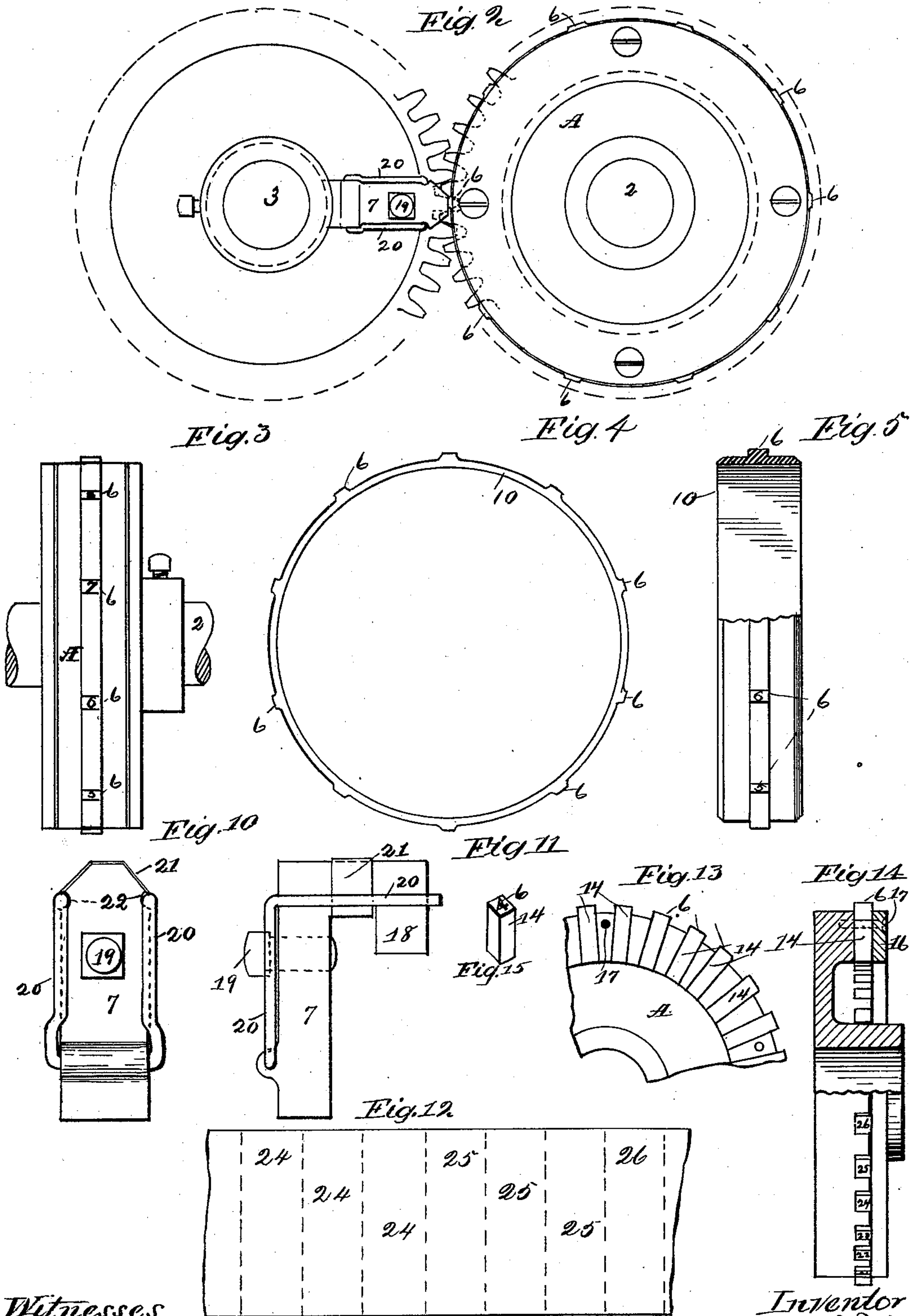
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(No Model.)

2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

CHARLES B. POST, OF NEW LONDON, OHIO, ASSIGNOR TO JAY F. LANING, OF NORWALK, OHIO.

NUMBERING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 711,590, dated October 21, 1902.

Application filed March 5, 1901. Serial No. 49,988. (No model.)

To all whom it may concern:

Be it known that I, CHARLES B. POST, a citizen of the United States, and a resident of New London, county of Huron, State of Ohio, have invented certain new and useful Improvements in Numbering-Machines, of which I hereby declare the following to be a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention is adapted for use in connection with printing-presses that print from a continuous web and where the paper is in motion, as on rotary presses. It can also be adapted, however, to use with a press where the paper has an intermittent motion.

My invention is designed for numbering consecutively a limited number of pages, leaves, or slips formed into a book or pad and comprising one series repeated continuously as often as each series is completed.

My invention consists in the employment of specific construction of printing-wheels upon which are set the type, tympan against which the impressions are made, in hunting cog-gearing for operating the same, and in various combinations of parts and essential details of construction.

I exemplify my invention in the mechanism shown in the accompanying drawings and hereinafter describe and particularly point out the novelty thereof in the claims.

In the accompanying drawings, Figure 1 is a plan view of the device, showing duplicate type and platen wheels. Fig. 2 is a side view of numbering-wheel and platen-wheel. Fig. 3 is an edge view of numbering-wheel. Fig. 4 is a side view of one of the type-bands sleeved over the numbering-wheel. Fig. 5 is an edge view of the same, the upper portion being in transverse section. Fig. 6 is a side view of numbering-wheel and platen-wheels arranged for printing three rows of numbers. Fig. 7 is an edge view of the same. Fig. 8 is a diametrical section of the same, showing manner of securing type-bands thereto. Fig. 9 is an edge view of the platen-wheel shown in Fig. 6. Figs. 10 and 11 are side and plan views, respectively, of platens which hold the tympan-sheets. Fig. 12 shows a portion of a sheet printed by the numbering-wheel shown

in Fig. 7, in which each number is repeated three times. Fig. 13 is a side elevation, showing the upper part in section, of a numbering-wheel in which printing-type are shown inserted into the wheel; and Fig. 14 is an edge view of the wheel, the upper portion being in section in order to show the manner of securing the type therein. Fig. 15 shows a type.

In the views it will be seen that a complete machine comprises two wheels A and B, mounted in the same plane upon parallel shafts 2 and 3 and maintained in the required rotation together by means of differential spur-gears 4 and 5 upon the extremities of the shafts. The shafts and wheels in turn are mounted upon a convenient portion of a printing-press in such a position that the paper will run between the wheels, so as to receive the impression of the type on the numbering-wheel A. This wheel is provided with the type or figures 6 upon its periphery equal in number to the numerals in one series of pages, or if the number is small it can be repeated as many times as the series can be accommodated on the periphery of the wheel. The other wheel B of the pair carries the platens 7, against which the impression is made as the paper passes between the wheels, as will be further described hereinafter.

The shaft upon which the numbering-wheel is mounted is driven by means of a spur-gear 4, which is provided with as many teeth as there are numbers upon the wheel—that is, the number of characters upon the wheel, and the number of teeth upon the gear correspond either by being exactly the same or the number of teeth must be some multiple of the number of characters on the wheel.

To obtain the desired result that the platen shall come into contact at each revolution with a new character, so as to print consecutive numbers, I engage the gear upon the shaft of the numbering-wheel with the gear upon the shaft of the platen-wheel, which is provided with a different number of teeth from the gear on the numbering-wheel shaft. For instance, if there are fifty characters upon the numbering-wheel the gear upon that shaft will have fifty teeth, while the gear upon the platen-wheel shaft will have forty-nine teeth. There-

fore in each revolution of the platen-wheel the numbering-wheel will be short the distance of one tooth of a complete revolution and will present the next succeeding character to the platen-wheel, and this will be continued each time, dropping back one tooth until all the characters upon the wheel have been presented in turn to the platen. When, however, the number of characters on the numbering-wheel is a divisor of the number of teeth on the gear, in order to have the platen engage the numbers consecutively the controlling-gears must have a corresponding difference in the number of teeth—that is, instead of one tooth less than the number of teeth in the gear for the numbering-wheel there will be a multiple number of teeth less, according to the proportion of the number of characters to the number of teeth on the numbering-wheel. For instance, if the number of characters on the numbering-wheel is ten normally there would be ten teeth in its gear and nine teeth in the platen-wheel gear; but since that would make the teeth too large and ungainly it is better to make them a multiple of these numbers, as fifty in the numbering-wheel gear and forty-five in the platen-wheel gear, so that five teeth would be dropped in each revolution of the numbering-wheel gear. The reverse arrangement of teeth in the gears would obtain the same result if the gears had fifty and fifty-five teeth, respectively, only the numbering would be done in the reverse order, since the platen-wheel would then travel slower than the numbering-wheel.

The various details of the machine may be described as follows:

In Figs. 4 and 5 are shown the number-bands 10, sleeved over the numbering-wheels. These may be electrotype-plate, stereotype, or steel, with figures engraved thereon. These are secured to the wheel as shown in Fig. 8, where 11 is a dovetailed ring, between which and a dovetailed rim 12 of the wheel the band is clamped. Screws 13 fasten the parts together.

In Figs. 13, 14, and 15 I show a variation of the construction, where the numbers are formed upon the type-bars 14, which are inserted into radial slots 15 in the wheel. A ring 16 is then clamped over the type and fastened securely to the wheel, as shown, by screws 17.

The platen shown in the figures is constructed with a hook 18 and set-screw 19, so as to be readily attached to the edge of the platen-wheel. The platen extends radially down the side of the platen-wheel, and its inner extremity or shank is inserted in a groove 30 cut in the periphery of the hub of the wheel. It will readily be seen that in this construction the platen can be adjusted to stand upon any portion of the periphery, and any desired number of platens can be readily attached to the wheel to engage any given number of type upon the type-wheel. These

platens are provided with the hinged wire fasteners 20 for the little tympan sheets or cushions 21, upon which the printing is done. The wire fasteners spring into the grooves 22 at the edge of the platens and hold the sheets tightly extended. These wire fasteners are loop-shaped and bent at right angles, while the outer corners of the platens are truncated, so that when the bent-over portions of the loops are passed over the ends of the platens, as in Figs. 10 and 11, the strands making the sides of the loops will strain the tympan-sheets 21, which are placed over the platen extremities, and finally secure the ends of the sheets, when the strands spring into the grooves 22. By means of this arrangement the tympan can be placed wherever desired upon the platens at any point from one side to the other, as shown in Fig. 9. The advantage of this arrangement is seen especially in connection with a type-wheel such as is shown in Fig. 7, with a plural number of type thereon. By means of this wheel strips can be printed, as shown in Fig. 12, on parallel lines, with the characters or numerals thereon following one another in a diagonal line. The arrangement and position of characters can be changed by adjusting the position of the platens on the periphery of the platen-wheel and also the position of each tympan on its platen.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a printing-wheel provided with a plurality of type on its periphery, of a platen-wheel provided with independent platens thereon, each platen adjustably secured to any desired portion of the periphery thereof, and a tympan secured to each platen.

2. The combination with a printing-wheel provided with a plurality of type arranged in circular line thereon, of a platen-wheel, provided with a plural number of platens independently adjustable thereon, a tympan upon each platen and a fastening device for the tympan.

3. The combination with a printing-wheel provided with a plurality of circular rows of type on its periphery, of a platen-wheel, provided with independent platens thereon each platen adjustably secured to any desired portion of the periphery thereof and a tympan secured to each platen, the said tympan being so arranged upon the platens as to engage each a separate row of type upon the type-wheel.

4. The combination with a platen-wheel of independent platens mounted thereon, and means for adjustably securing the platens at any desired position upon the periphery of the wheel, comprising a wheel-hub and groove therein a shank to each platen, inserted in said groove a hooked outer extremity to the platen and a clamping-screw, substantially as described.

5. In combination with a printing-wheel provided with a plurality of circular rows of type of a platen-wheel independent platens thereon so constructed as to be movable to
5 any portion of the periphery, tympan upon the platens and a fastening device for the tympan, substantially as described.

6. The combination with a platen-wheel, of platens adjustably secured thereon, tym-
10 pans secured to the platens, and means for stretching and holding firmly the tympan upon the platens consisting of a spring-loop

hinged upon each platen and having its sides bent over the outer extremity of the platen and grooves in the sides of the platen into 15 which the sides of the loop are sprung, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES B. POST.

Witnesses:

J. F. LANING,
R. M. BROWNE.